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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,557	10/16/2003	Kiyohiro Akiyama	045237-0122	3492

22428 7590 03/30/2006

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EXAMINER

NEGRON, ISMAEL

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

3) 1

<b>Office Action Summary</b>	Application No. 10/686,557	Applicant(s) AKIYAMA, KIYOHIRO	
	Examiner Ismael Negron	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5-9,13-16,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 2-4,10-12 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/16/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's amendment filed on January 18, 2006 has been entered. Claims 1-5 and 9-13 have been amended. No claim has been cancelled. Claims 18 and 19 have been added. Claims 1-19 are still pending in this application, with claims 1, 9, 18 and 19 being independent.

### *Title*

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **LED Vehicle Lamp including Reflector with Paraboloidal Sections.**

### *Abstract*

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology

often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it exceeds 150 words in length. Correction is required. See MPEP § 608.01(b).

3. The Examiner respectfully suggests amending the abstract as follows:

A vehicle lamp includes a set of alternately provided first and second reflection surfaces that reflect the light emitted by a first and second respective diodes toward a lamp lens, ~~and a set of second reflection surfaces that reflect light emitted by a second diode toward the lamp lens. The first reflection surfaces and the second reflection surfaces are alternately provided in the path of the light that is reflected from the lamp lens.~~ Each of the first and second reflection surface is a part of a rotational paraboloid having a focus on a light emission source of the a respective one of the first and second diodes, such that the paraboloids corresponding to ~~the first~~ reflection surfaces that are farther from the first their respective diodes have longer focal lengths. ~~Each of the second~~

~~reflection surface is a part of a rotational paraboloid having a focus on a light emission source of the second diode such that the paraboloids corresponding to the second reflection surfaces that are farther from the second diode have longer focal lengths.~~

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, each of the reflection surfaces being divided into a plurality of reflection surfaces (as recited in Claim 7) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

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renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

6. The disclosure is objected to because of the following informalities: paragraph 46, line 5 should read "reflection surfaces 9 8 relative to an optical axis Z1-Z1 to be".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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8. Claim 1 is indefinite as it is not clear if the first and second reflection surfaces are formed as a structure separate from the lamp lens (as suggested by the claimed language defining the reflection surfaces as directing light toward the lamp lens), or formed integrally with such lamp lens (as suggested by the claimed language defining the reflection surfaces as being provided over almost the entire light emission area of the lamp lens).

The applicant is advised that in the comparing the claimed invention with the Prior Art, the Examiner assumed the reflection surfaces as been a separate structure, as disclosed by Figure 4 of the instant application. The Examiner respectfully suggests amending Claim 1 to recite an inner housing (such as inner housing 3 in figures 1-4), with the reflection surfaces being provided over almost the entire area of such inner housing. Basis for such amendment can be found in paragraph 48 and figures 1-4 of the instant disclosure.

9. Claim 9 is rejected for the same reasons as Claim 1.

10. Claims 2-8 and 10-17 are rejected for their dependency on rejected claims 1 or 9.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 5-7 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by ITO et al. (U.S. Pat. 6,234,646).

12. ITO et al. discloses a vehicle lighting unit having:

- **a first light emitting diode (as recited in claims 1 and 18),**  
Figure 4, reference number 4a;
- **the first light emitting diode (LED) being arranged at a first location (as recited in claims 1 and 18), as seen in Figure 4;**
- **the first LED emitting light to a first area (as recited in claims 1 and 18), as evidenced by Figure 4;**
- **a second LED (as recited in claims 1 and 18), Figure 4,**  
reference number 4b;
- **the second LED being arranged at a second location (as recited in claims 1 and 18), as seen in Figure 4;**
- **the second location being different from the first location (as recited in claims 1 and 18), as seen in Figure 4;**
- **the second LED emitting light to a second area (as recited in claims 1 and 18), as evidenced by Figure 4;**
- **a lamp lens (as recited in claims 1 and 18), Figure 4, reference number 5;**



- **the lamp lens having a light emission area (as recited in claims 1 and 18), inherent;**
- **a reflector (as assumed from claims 1 and 18), Figure 4, reference number 3;**
- **the reflector including a plurality of first reflection surfaces (as recited in claims 1 and 18), Figure 4, reference number 3a;**
- **the first reflection surfaces reflecting the light emitted by the first LED toward the lamp lens (as recited in claims 1 and 18), as seen in Figure 4;**
- **the reflector including a plurality of second reflection surfaces (as recited in claims 1 and 18), Figure 4, reference number 3b;**
- **the second reflection areas reflecting light emitted by the second LED toward the lamp lens (as recited in claims 1 and 18), as seen in Figure 4;**
- **the first reflection surfaces and the second reflection surfaces are alternately provided over almost the entire area of the reflector (as assumed from claims 1 and 18), as seen in Figure 4;**
- **the first reflection surfaces being arranged mostly in the first area (as recited in claims 1 and 18), as seen in Figure 4;**
- **the second reflection surfaces being arranged mostly in the second area (as recited in claims 1 and 18), as seen in Figure 4;**

- **each of the first reflection surfaces being a part of a rotational paraboloid (as recited in claims 1 and 18), inherent, as evidenced by the parallel ray output seen in Figure 4;**
- **the paraboloid of the first reflection areas having a focus on a light emission source of the first light emitting diode such that the paraboloids corresponding to the first reflection surfaces that are farther from the first LED have longer focal lengths (as recited in claims 1 and 18), inherent, as evidenced by the parallel ray output seen in Figure 4;**
- **each of the second reflection surfaces being a part of a rotational paraboloid (as recited in claims 1 and 18), inherent, as evidenced by the parallel ray output seen in Figure 4;**
- **the rotational paraboloid of the second reflection surfaces having a focus on a light emission source of the second light emitting diode such that the paraboloids corresponding to the second reflection surfaces that are farther from the second LED have longer focal lengths (as recited in claims 1 and 18), inherent, as evidenced by the parallel ray output seen in Figure 4;**
- **a plurality of first and second LED (as recited in Claim 5), as seen in Figure 3;**

- **each of the first and second LED, and the first and the second reflection surfaces are integrated into an arrangement (as recited in Claim 5), as evidenced by Figure 3;**
- **a plurality of the arrangements, wherein each of the arrangement is positioned at a different location in a light reflection direction of the first reflection surfaces and the second reflection surfaces (as recited in Claim 5), as seen in Figure 3;**
- **a 0 degree axis of the first LED being inclined toward a first reflection surfaces-side relative to an optical axis of the first reflection surfaces (as recited in Claim 6), as seen in Figure 4;**
- **a 0 degree axis of the second LED being inclined toward a second reflection surfaces-side relative to an optical axis of the second reflection surfaces (as recited in Claim 6), as seen in Figure 4;**
- **an optical axis direction of the first reflection surfaces being different from an optical axis direction of the second reflection surfaces (as recited in Claim 7), as seen in Figure 4; and**
- **each of the first and second reflection surfaces being divided into a plurality of reflection surfaces (as recited in Claim 8), as seen in Figure 4.**

13. Claims 9, 13-14 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by ITO et al. (U.S. Pat. 6,234,646).

14. ITO et al. discloses a vehicle lighting unit having:

- **a light emitting diode (as recited in claims 1 and 19), Figure 4, reference number 4a;**
- **the light emitting diode (LED) emitting light (as recited in claims 1 and 19), inherent;**
- **a lamp lens (as recited in claims 1 and 19), Figure 4, reference number 5;**
- **the lamp lens having a light emission area (as recited in claims 1 and 19), inherent;**
- **a reflector (as assumed from claims 1 and 19), Figure 4, reference number 3;**
- **the reflector including a plurality of reflection surfaces (as recited in claims 1 and 19), Figure 4, reference number 3a;**
- **the reflection surfaces reflecting the light emitted by the LED (as recited in claims 1 and 19), as seen in Figure 4;**
- **the reflector including a plurality of mirror finished surfaces (as recited in claims 1 and 19), Figure 4, reference number 3b;**

- **the mirror finished surfaces being arranged to not reflect light from the LED, but reflect outside light incident from the lamp lens (as recited in claims 1 and 19), as evident by Figure 4;**
- **the reflection surfaces and the mirror finished surfaces being alternately provided over almost the entire area of the reflector (as assumed from claims 1 and 19), as seen in Figure 4;**
- **the first reflection surfaces being arranged mostly in the first within a range of an illumination angle of the LED (as recited in claims 1 and 19), as seen in Figure 4;**
- **each of the reflection surfaces being a part of a rotational paraboloid (as recited in claims 1 and 19), inherent, as evidenced by the parallel ray output seen in Figure 4;**
- **the paraboloid of the first reflection areas having a focus on a light emission source of the first LED such that the paraboloids corresponding to the first reflection surfaces that are farther from the first LED have longer focal lengths (as recited in claims 1 and 19), inherent, as evidenced by the parallel ray output seen in Figure 4;**
- **each of the mirror finished surfaces being arranged on a segment that connects the light emission source of the LED to one of boundaries between the reflection surfaces and the mirror finished surfaces, or arranged on an opposite side to a**

**light reflection direction of the reflection surfaces from the segment (as recited in claims 1 and 19), as evidenced by Figure 4;**

- **a plurality of LED (as recited in Claim 13), as seen in Figure 3;**
- **each of the LED and the reflection surfaces are integrated into an arrangement (as recited in Claim 13), as evidenced by Figure 3;**
- **a plurality of the arrangements, wherein each of the arrangement is positioned at a different location in a light reflection direction of the reflection surfaces (as recited in Claim 13), as seen in Figure 3;**
- **a 0 degree axis of the LED being inclined toward a first reflection surfaces-side relative to an optical axis of the first reflection surfaces (as recited in Claim 14), as seen in Figure 4;**
- **the surfaces having different optical axis directions (as recited in Claim 15), as seen in Figure 4; and**
- **each of the reflection surfaces being divided into a plurality of reflection surfaces (as recited in Claim 16), as seen in Figure 4.**

***Relevant Prior Art***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Yoshida** (U.S. Pat. 5,724,183), **Ito et al.** (U.S. Pat. 6,238,073)) and **Pashley et al.** (U.S. Pat. 6,264,346) disclose illumination devices including a reflector having a plurality of alternate first and second reflection sections, each section reflecting light from a different input directions toward a same output direction.

**Murata et al.** (U.S. Pat. 4,929,866), **Melby** (U.S. Pat. 6,264,346), **Hitora** (U.S. Pat. 5,642,933) and **Amano** (U.S. Pat. 6,814,475) disclosed LED illumination devices including reflectors having a plurality of first and second reflection sections for directing light from the LED towards an output lens.

**Heckert** (U.S. Pat. 1,199,071), **Hamada et al.** (U.S. Pat. 4,706,173), **Fesko** (U.S. Pat. 4,994,947), **Amano** (U.S. Pats. 6,637,923 and 6,672,746), **Natsume** (U.S. Pat. 6,796,695) and **Amano** (U.S. Pats. 6,805,476 and 6,811,277) disclose vehicle illumination devices including a lens, a light source and a reflector, such reflector having a plurality of reflective surfaces arranged so that some surfaces only reflect light from the light source, while others surfaces only reflect outside light incident from the lens. Some feature light emitting diodes as the light source.

***Allowable Subject Matter***

16. Claims 2-3, 10-12 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches a vehicle lamp including first and second light emitting diodes arranged at different locations, a lamp lens, and a reflector having a plurality of alternate paraboloid first and second reflection sections, each section reflecting light from a respective one of the LED toward a same output direction. A linear Fresnel lens is located between each LED and the corresponding reflection surface, the Fresnel lens mostly transmitting the light from the LED in a cross section including the reflective surfaces, while refracting the light from such LED as almost parallel light in a cross section orthogonal to the light reflection direction of the respective surfaces. In a second embodiment, the lamp lens includes outer and inner lenses; with the inner lens, including a plurality of alternatively provided concave and convex portions corresponding to the ranges in which reflected light from the reflection surfaces are incident. A third embodiment features only the first LED, and the second reflective surfaces are arranged to not reflect light from the LED, but to reflect outside light incident from the lamp lens. The third embodiment also including the claimed linear Fresnel lens. A fourth embodiment also includes the claimed outer and inner lenses.



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18. No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically the claimed linear Fresnel lens structure or the claimed inner lens, in combination with the other recited structural limitations of the claimed Vehicle lamps.

### ***Response to Arguments***

19. Applicant's arguments filed on January 18, 2006 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***


20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (571) 272-2378. The facsimile machine number for the Art Group is (571) 273-8300.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications maybe obtained from either Private PAIR or Public PAIR. Status

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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.



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